

Examiner's Amendment

Claim 13 (currently amended): The method of claim 10, wherein said step of detecting ~~[[step]]~~ a cycle slip further comprises:

compensating a magnitude of said filtered phase difference based on a predetermined compensation response to produce a compensated magnitude;

detecting when a positive bipolar pulse peak in said filtered phase difference positively exceeds a predetermined positive cycle slip threshold; and

detecting when a negative bipolar pulse peak in said filtered phase difference negatively exceeds a predetermined negative cycle slip threshold;

wherein ~~[[a]]~~ the cycle slip output is generated if a positive bipolar pulse peak or a negative bipolar pulse peak are detected.

Claim 14 (original): The method of claim 10, further comprising a step of detecting a cycle slip direction.

Claims 15-16 (canceled)

Claim 17 (previously presented): The method of claim 10, wherein said cycle slip size and positive cycle slip output and said negative cycle slip output are used to correct a cycle slip occurrence.

Claim 18 (previously presented): The method of claim 10, wherein said cycle slip size and positive cycle slip output and said negative cycle slip output are stored in order to accumulate a cycle slip correction factor.

Claim 19 (canceled)

Claim 20 (currently amended): A cycle slip detection method for detecting a cycle slip in a phase comparison circuit, comprising the steps of:

filtering out phase difference frequency components above a predetermined high frequency cut-off to produce a filtered phase difference;

compensating a magnitude of said filtered phase difference based on a predetermined compensation response; and

detecting a cycle slip in said compensated filtered phase difference and generating a cycle slip output if ^{the} compensated filtered phase difference magnitude exceeds a predetermined cycle slip threshold[[; and]]

~~compensating a magnitude of said filtered phase difference based on a predetermined compensation response before said detecting step.~~

Claim 21 (new)^{previously presented}: The method of claim 20, further comprising a step of detecting a cycle slip direction.

Claim 22 (currently amended): The method of claim 20, further comprising the steps of:

detecting a positive bipolar pulse peak in said filtered phase difference if a filtered phase difference magnitude positively exceeds a predetermined positive cycle slip threshold;

detecting a negative bipolar pulse peak in said filtered phase difference if a filtered phase difference magnitude negatively exceeds a predetermined negative cycle slip threshold;

generating a positive cycle slip output if said positive bipolar pulse peak occurs before a corresponding negative bipolar pulse peak and if said bipolar pulse frequency is within a predetermined mid-frequency range; and

generating a negative cycle slip output if said negative bipolar pulse peak occurs before said positive bipolar pulse peak; and

~~generating a positive cycle slip output if a positive bipolar pulse peak occurs first in said bipolar pulse and if said bipolar pulse frequency is within a predetermined mid-frequency range, and conversely generating a negative cycle slip output if a negative bipolar pulse peak occurs first in said bipolar pulse and if said bipolar pulse frequency is within [[a]] said predetermined mid-frequency range.~~

Claim 23 (new): ^{previously presented} The method of claim 20, further comprising the step of estimating a cycle slip size based on a magnitude of a compensated, filtered phase difference if both peaks of a bipolar pulse are detected.